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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/700,558

11/05/2003

Youhei Toyoshima

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EXAMINER

LUKS, JEREMY AUSTIN

ART UNIT

PAPER NUMBER

2837

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/700,558	<b>Applicant(s)</b> TOYOSHIMA, YOUHEI	
	<b>Examiner</b> JEREMY LUKS	<b>Art Unit</b> 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-39 is/are pending in the application.
- 4a) Of the above claim(s) 19-22,24-26,28-33 and 37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17,18,23,27,34-36,38 and 39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/27/08</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 17, 18, 23, 27, 34-36, 38 and 39 in the reply filed on 1/31/08 is acknowledged.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 17, 18, 27, 34-36 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deremer (2,661,073) in view of Bourne (2,297,046). Deremer teaches a muffler (Figure 1, #10) that is configured to discharge exhaust from a machine having one of an engine and a compressor (Col. 1, Lines 1-4), the muffler (10) comprising: an outer muffler shell (12); a first exhaust tube (22'); a tubular member (24) formed inside the muffler shell (12), wherein a portion of the tubular member (24) is arranged inside the muffler shell (12) on an upstream end (end #14 is upstream) of the muffler (10) in a direction of exhaust flow, wherein a first end (end near connecting to tube 22') of the tubular member (24) is in fluid communication with the first exhaust tube (22'), wherein a second end (downstream, right end of tube #24) of the tubular member (24) is in fluid communication with a space (33) inside the muffler shell (12) (Col. 4, Lines 60-65), and wherein the tubular member (24) comprises a plurality of through

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holes (39) located on the tubular member's circumferential surface which is configured to attenuate acoustic energy of a first frequency band (Col. 5, Lines 1-7); a second exhaust tube (38) configured to discharge exhaust in the space inside the muffler shell to the atmosphere (Col. 4, Lines 23-29); and further comprising a partition wall (30) and a plurality of air holes (40) located on the second exhaust tube (38) which is configured to further attenuate acoustic energy of the first frequency band (Col. 5, Lines 1-7).

Deremer fails to teach a resonator set protruding from and formed of the portion of the tubular member, wherein the resonator set is configured to attenuate acoustic energy of a second frequency band, which is different from the first frequency band and which modulates the first frequency band; and wherein the resonator set comprises at least two resonators; and wherein each of the resonators has a first end opening to an inner face of a tubular member and a closed second end, and a distance between the closed end of a first of the two resonators and the tubular member differs from a distance between the closed end of the second of the two resonators and the tubular member.

Bourne teaches a resonator set (Figure 9, #31, 32) formed of the portion of a tubular member (30) and when used in combination with Deremer is situated on the end upstream of the perforations (of Deremer Figure 1, #39); wherein the resonator set is configured to attenuate acoustic energy of a second frequency band when used in combination, which is different from the first frequency band and which modulates the first frequency band; wherein the resonator set comprises at least two resonators (Figure 9, #31, 32); and wherein each of the resonators has a first end opening (33, 34) to an inner face of a tubular member (30) and a closed second end, and a distance

between the closed end of a first (31) of the two resonators and a tubular member (30) differs from a distance between the closed end of the second (32) of the two resonators and the tubular member (30). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Deremer, with the apparatus of Bourne for use in short conduits where the production of higher harmonics by shock excitation is unlikely or unimportant. Further, it would have been obvious to try combining the resonators of Bourne with the tubular member of Deremer to yield the predictable result of increased sound attenuation; as sound attenuation is a goal of both inventions. *KSR International Co. v. Teleflex Inc.*, 82 USPQ 2d 1385 (2007).

3. Claims 23 and 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deremer (2,661,073) in view of Bourne (2,297,046) as applied to claims 18 and 34, and further in view of De Lank (EP 0445431). Deremer and Bourne are relied upon for the reason and disclosures set forth above. Deremer and Bourne fail to describe an absorbing material and scatter preventative part for use in a resonator. Nevertheless, De Lank discloses an absorbing material (Figure 1, #5) and scatter preventative part (2) for use in a resonator. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the muffler of Deremer as modified, with the noise absorbing material and scatter prevention part of De Lank to increase the noise absorption coefficient of the resonator set, and protect said noise absorption material from becoming dislodged, while still allowing gasses to enter the resonator set.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 17, 18, 23, 27, 34-36, 38 and 39 have been considered but are moot in view of the new ground(s) of rejection. The Examiner considers that the obvious combination of the references cited herein teach all of the limitations as claimed by Applicant.

5. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Regarding the Bourne reference, Bourne teaches placing the resonator set on an exhaust pipe for the purpose of sound attenuation. The Examiner has combined these sound attenuating resonators with a known exhaust pipe of Deremer, since Deremer's exhaust pipe or tube #24 is inside the muffler shell (12), the combination teaches placing the resonators inside a shell.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent arts of record relating to acoustic dumpers for exhaust systems are disclosed in the PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Luks whose telephone number is (571) 272-

2707. The examiner can normally be reached on Monday-Thursday 8:30-6:00, and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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